False-positive result with BinaxNOW Legionella Antigen immunochromatographic (ICT) assay: response to Helbig et al. (2001)

As in the paper by Helbig et al. (2001), we found a very weakly positive band with the BinaxNOW Legionella Antigen immunochromatographic (ICT) assay (Binax) in a urine sample from a patient who had an infection caused by a microorganism other than Legionella pneumophila.

A 51-year-old woman of Indonesian origin presented with recurrent pneumonia and tumour-like lesions in the brain on computed tomography (CT) scanning. As the cause was not found immediately, atypical causes of respiratory problems, such as L. pneumophila, were also examined. The BinaxNOW assay was performed on a urine sample and showed a weakly positive band after 15 min, not increasing in intensity during the next 45 min. However, as the manufacturer’s instructions for use point out that any positive band means a positive result, L. pneumophila was not excluded as the cause of the respiratory problems. Some days later, we cultured Nocardia asteroides from a pleural fluid sample, which explained both the lung and the brain lesions. L. pneumophila was never cultured and Legionella serology remained negative. By that time, because of the doubtful result of the BinaxNOW assay, the patient had already received clarithromycin. To determine whether there was any interference by N. asteroides in the BinaxNOW assay, we made a 0.5 McFarland suspension in a liquid broth both at room temperature and heated to 100 °C for 10 min. There was no difference between the not-heated and the heated sample – both gave a weakly positive band that did not increase in intensity with time.

Our general feeling is that weakly positive bands, the intensity of which do not increase within 60 min, might be false-positive; this should be noted in manufacturer’s instructions for use. This is of major importance to rule out any confusion and to avoid unnecessary use of antibiotics.

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